

SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester's Full Name: Konata George Examiner #: 77560 Date: 3/4/02
Art Unit: 1616 Phone Number 308 4646 Serial Number: 09665346
Mail Box and Bldg/Room Location: _____ Results Format Preferred (circle): PAPER ~~DISK~~ ~~E-MAIL~~
2D19 2618 MEJ

If more than one search is submitted, please prioritize searches in order of need.

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: Nucleotide compounds that block the bitter taste of oral comp.
Inventors (please provide full names): Richard McGrover and Stephen Gravin

Earliest Priority Filing Date: 5/25/01

For Sequence Searches Only Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.

Please search the attached compounds in
flavor masking, or bitterness inhibitor compositions.
or bitterness inhibition

Thanks
Konata G.

POINT OF CONTACT:
PAUL SCHULWITZ
TECHNICAL INFO. SPECIALIST
CM1 6B06 TEL. (703) 305-1954

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STAFF USE ONLY

	Type of Search	Vendors and cost where applicable
Searcher: <u>Paul Schulwitz</u>	NA Sequence (#) _____	STN <u>✓</u>
Searcher Phone #: _____	AA Sequence (#) _____	Dialog _____
Searcher Location: _____	Structure (#) <u>2</u>	Questel/Orbit _____
Date Searcher Picked Up: <u>3/5</u>	Bibliographic _____	Dr.Link _____
Date Completed: <u>3/6</u>	Litigation _____	Lexis/Nexis _____
Searcher Prep & Review Time: <u>30</u>	Fulltext _____	Sequence Systems _____
Clerical Prep Time: _____	Patent Family _____	WWW/Internet _____
Online Time: _____	Other _____	Other (specify) _____

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L1 181627 SEA FILE=REGISTRY ABB=ON PLU=ON NCNC2-NCNC3/ES
 L2 2820 SEA FILE=REGISTRY ABB=ON PLU=ON OC4-OPOC3/ES
 L3 2139 SEA FILE=REGISTRY ABB=ON PLU=ON L1 AND L2
 L4 1346 SEA FILE=REGISTRY ABB=ON PLU=ON L3 AND NR=4
 L5 1346 SEA FILE=REGISTRY ABB=ON PLU=ON L4 AND NRS<3
 L9 532 SEA FILE=REGISTRY ABB=ON PLU=ON OC4/ES AND NCNC2-NCNC3/ES
 AND NR=3 AND NRS=2 AND N=5 AND O=8 AND P=1
 L10 770 SEA FILE=REGISTRY ABB=ON PLU=ON NCNC3/ES AND OC4/ES AND N=2
 AND O=9 AND P=1 AND NR=2 AND NRS=2
 L11 477 SEA FILE=REGISTRY ABB=ON PLU=ON OC4/ES AND NCNC2-NCNC3/ES
 AND NR=3 AND NRS=2 AND N=5 AND O=6 AND P=1
 L12 287 SEA FILE=REGISTRY ABB=ON PLU=ON NCNC3/ES AND OC4/ES AND N=3
 AND O=7 AND P=1 AND NR=2 AND NRS=2
 L13 1058 SEA FILE=REGISTRY ABB=ON PLU=ON OC4/ES AND NCNC2-NCNC3/ES
 AND NR=3 AND NRS=2 AND N=5 AND O=7 AND P=1
 L14 405 SEA FILE=REGISTRY ABB=ON PLU=ON OC4/ES AND NCNC2-NCNC3/ES
 AND NR=3 AND NRS=2 AND N=5 AND O=12 AND P=3
 L15 4861 SEA FILE=REGISTRY ABB=ON PLU=ON L5 OR L11 OR L12 OR L13 OR L14
 L16 370 SEA FILE=HCAPLUS ABB=ON PLU=ON L15(L) (FLAVOR? OR FLAVOUR? OR
 ?BITTER? OR TAST?)
 L18 14567 SEA FILE=HCAPLUS ABB=ON PLU=ON L15(L) (MASK? OR INHIBIT? OR
 HID?)
 L19 17 SEA FILE=HCAPLUS ABB=ON PLU=ON L18 AND L16

L19 ANSWER 1 OF 17 HCAPLUS COPYRIGHT 2002 ACS

AN 2001:717128 HCAPLUS

DN 135:256473

TI Unpleasant odor and taste masking agents containing yeast extracts for
canned foods

IN Uchimura, Nobuhiro; Ason, Kenichi; Oshima, Hiroshi; Araki, Hiroko; Shinro,
Osamu

PA Kohjin Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 5 pp.

CODEN: JKXXAF

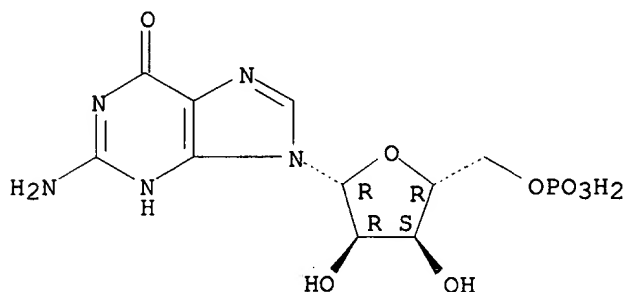
DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2001269149	A2	20011002	JP 2000-88216	20000328
AB	Unpleasant odor and taste of canned foods are controlled by agents contg. yeast exts. Satsuma mandarin was canned with syrup contg. Aromild (yeast ext. contg. Na 5'-inosinate, Na 5'-guanylate, Na 5'-uridyate, Na 5'-cytidylate, and Na glutamate).				
IT	5550-12-9, Sodium 5'-guanylate 7545-48-4, Sodium 5'-uridyate RL: FFD (Food or feed use); BIOL (Biological study); USES (Uses) (masking of unpleasant odor and taste of canned foods with yeast exts.)				
RN	5550-12-9 HCAPLUS				
CN	5'-Guanylic acid, disodium salt (7CI, 8CI, 9CI) (CA INDEX NAME)				

Absolute stereochemistry.



Guanosine 5'-monophosphate

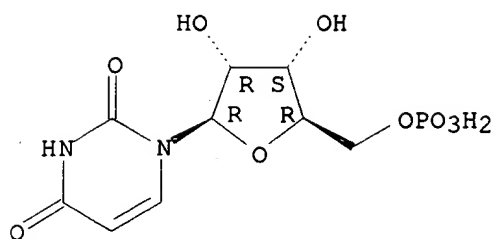
2, 20

● 2 Na

RN 7545-48-4 HCAPLUS

CN 5'-Uridylic acid, sodium salt (8CI, 9CI) (CA INDEX NAME)

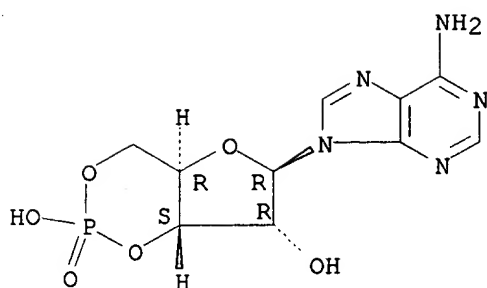
Absolute stereochemistry.



●x Na

L19 ANSWER 2 OF 17 HCAPLUS COPYRIGHT 2002 ACS
 AN 2000:890679 HCAPLUS
 DN 134:144816
 TI Serotonin inhibits voltage-gated sodium current by cyclic adenosine monophosphate-dependent mechanism in bullfrog taste receptor cells
 AU Imendra, K. G.; Fujiyama, R.; Miyamoto, T.; Okada, Y.; Sato, T.
 CS Department of Physiology, Nagasaki University School of Dentistry, Nagasaki, 852-8588, Japan
 SO Neuroscience Letters ~~(2000) 294~~ 294(3), 151-154
 CODEN: NELED5; ISSN: 0304-3940
 PB Elsevier Science Ireland Ltd.
 DT Journal
 LA English
 AB The authors have investigated the effect of 5-hydroxytryptamine (serotonin) (5-HT) on the membrane properties of bullfrog (*Rana catesbeiana*) taste receptor cells (TRCs) using patch-clamp technique. External application of 5-HT reversibly suppressed the voltage-gated Na⁺ current (I_{Na}) in about half of the TRCs sampled. The magnitude of suppression of peak I_{Na} was dependent on the holding potential of the cell. Forskolin and cAMP mimicked the suppressive effect of 5-HT on I_{Na}, but an internal protein kinase A-inhibitor potentiated I_{Na}. These results suggest that 5-HT suppresses I_{Na} of bullfrog TRCs via protein kinase A-dependent phosphorylation, resulting in suppression of the excitability of bullfrog TRCs.
 IT 60-92-4, CAMP
 RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
 (serotonin **inhibits** voltage-gated sodium current by
 CAMP-dependent mechanism in bullfrog **taste** receptor cells)
 RN 60-92-4 HCAPLUS
 CN Adenosine, cyclic 3',5'-(hydrogen phosphate) (8CI, 9CI) (CA INDEX NAME)
 Absolute stereochemistry.

chem 1,5



Adenosine 3':5' - cyclic
monophosphate

cm¹/4

RE.CNT 20 THERE ARE 20 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L19 ANSWER 3 OF 17 HCAPLUS COPYRIGHT 2002 ACS

AN 2000:693979 HCAPLUS

DN 133:265951

TI Food flavor deterioration inhibitors containing nucleotides and cooked food containing nucleotides

IN Kobayashi, Naomichio; Nakano, Hiroshi; Itota, Tadashi

PA Snow Brand Milk Products Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 3 pp.

CODEN: JKXXAF

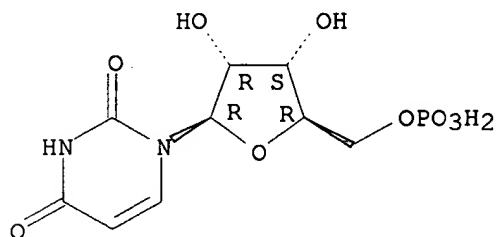
DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2000270790	A2	20001003	JP 1999-76996	19990323
AB	The flavor deterioration inhibitors and cooked food prevented from flavor deterioration due to heat by adding nucleotides are claimed. Addn. of disodium cytidylate to vegetable soup for baby food prevented change in the taste due to retorting.				
IT	3387-36-8 5550-12-9, Disodium guanylate				
	RL: FFD (Food or feed use); BIOL (Biological study); USES (Uses) (food flavor deterioration inhibitors contg. nucleotides for cooked, e.g. retort pouched, food)				
RN	3387-36-8 HCAPLUS				
CN	5'-Uridylic acid, disodium salt (7CI, 8CI, 9CI) (CA INDEX NAME)				

Absolute stereochemistry.

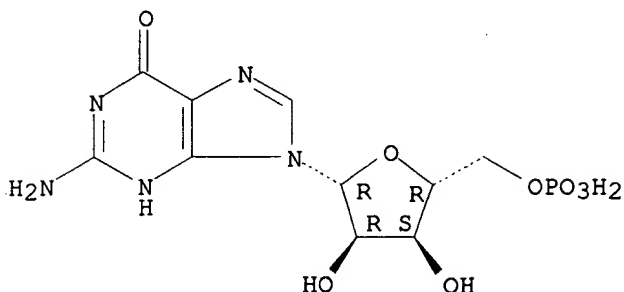


Uridine 5' - monophosphate

● 2 Na

RN 5550-12-9 HCAPLUS
 CN 5'-Guanylic acid, disodium salt (7CI, 8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



Guanosine -5' monophosphate

●2 Na

L19 ANSWER 4 OF 17 HCAPLUS COPYRIGHT 2002 ACS
 AN 2000:456828 HCAPLUS
 DN 133:57997
 TI Inhibitors of the bitter taste response
 IN Margolskee, Robert F.; Ming, Ding
 PA Mount Sinai School of Medicine of New York University, USA
 SO PCT Int. Appl., 43 pp.
 CODEN: PIXXD2

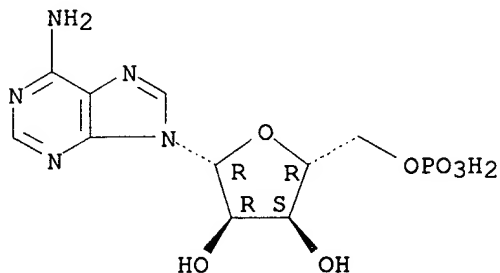
DT Patent
 LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2000038536	A2	20000706	WO 1999-US30610	19991222
	WO 2000038536	A3	20001116		
	W: AU, CA, JP, US				
	RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	EP 1139793	A2	20011010	EP 1999-967519	19991222
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
PRAI	US 1998-113562	P	19981223		
	WO 1999-US30610	W	19991222		
AB	The present invention relates to methods for identifying inhibitors of the bitter taste response, and by methods of using such inhibitors to either block the perception of bitterness and/or promote the perception of a sweet taste. The inhibitors of the invention may be used as flavor enhancers in foods and pharmaceuticals. The methods of the invention may further be used to characterize the gustatory perception of novel taste additives.				
IT	61-19-8, Adenosine monophosphate, biological studies				
	84-21-9, Adenosine 3'-monophosphate 130-49-4, Adenosine 2'-monophosphate				
RL	FFD (Food or feed use); BIOL (Biological study); USES (Uses)				
	(inhibitors of the bitter taste response)				

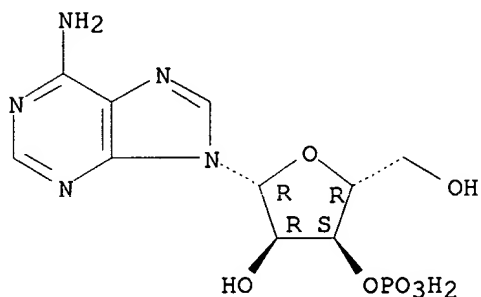
RN 61-19-8 HCAPLUS
 CN 5'-Adenylic acid (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



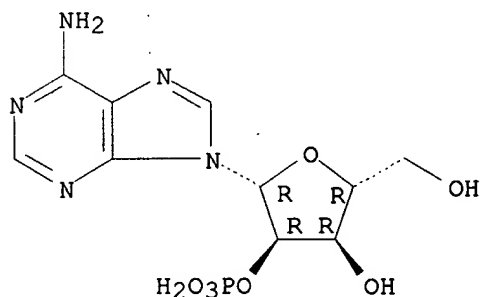
RN 84-21-9 HCAPLUS
 CN 3'-Adenylic acid (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).



RN 130-49-4 HCAPLUS
 CN 2'-Adenylic acid (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



L19 ANSWER 5 OF 17 HCAPLUS COPYRIGHT 2002 ACS

AN 1999:804084 HCAPLUS

DN 132:163668

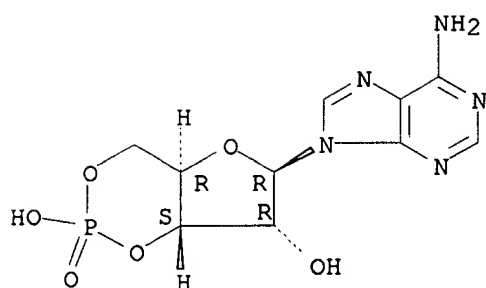
TI IP3-independent release of Ca²⁺ from intracellular stores: a novel mechanism for transduction of bitter stimuli

AU Ogura, Tatsuya; Kinnamon, Sue C.
CS Department of Anatomy and Neurobiology, Colorado State University, Fort Collins, CO, 80523, USA
SO J. Neurophysiol. (1999), 82(5), 2657-2666
CODEN: JONEA4; ISSN: 0022-3077
PB American Physiological Society
DT Journal
LA English
AB A variety of substances with different chem. structures elicit a bitter taste. Several different transduction mechanisms underlie detection of bitter tastants; however, these have been described in detail for only a few compds. In addn., most studies have focused on mammalian taste cells, of which only a small subset is responsive to any particular bitter compd. In contrast, .apprx.80% of the taste cells in the mudpuppy, *Necturus maculosus*, are bitter-responsive. In this study, we used Ca^{2+} imaging and giga-seal whole cell recording to compare the transduction of dextromethorphan (DEX), a bitter antitussive, with transduction of the well-studied bitter compd. denatonium. Bath perfusion of DEX (2.5 mM) increased the intracellular Ca^{2+} level in most taste cells. The DEX-induced Ca^{2+} increase was inhibited by thapsigargin, an inhibitor of Ca^{2+} transport into intracellular stores, but not by U73122, an inhibitor of phospholipase C, or by ryanodine, an inhibitor of ryanodine-sensitive Ca^{2+} stores. Increasing intracellular cAMP levels with a cell-permeant cAMP analog and a phosphodiesterase inhibitor enhanced the DEX-induced Ca^{2+} increase, which was inhibited partially by H89, a protein kinase A inhibitor. Electrophysiol. measurements showed that DEX depolarized the membrane potential and inhibited voltage-gated Na^{+} and K^{+} currents in the presence of GDP-.beta.-S, a blocker of G-protein activation. DEX also inhibited voltage-gated Ca^{2+} channels. We suggest that DEX, like quinine, depolarizes taste cells by block of voltage-gated K channels, which are localized to the apical membrane in mudpuppy. In addn., DEX causes release of Ca^{2+} from intracellular stores by a phospholipase C-independent mechanism. We speculate that the membrane-permeant DEX may enter taste cells and interact directly with Ca^{2+} stores. Comparing transduction of DEX with that of denatonium, both compds. release Ca^{2+} from intracellular stores. However, denatonium requires activation of phospholipase C, and the mechanism results in a hyperpolarization rather than a depolarization of the membrane potential. These data support the hypothesis that single taste receptor cells can use multiple mechanisms for transducing the same bitter compd.

IT 60-92-4, Cyclic AMP
RL: BAC (Biological activity or effector, except adverse); BPR (Biological process); BIOL (Biological study); PROC (Process)
(increasing intracellular cAMP levels in mudpuppy taste receptor cells enhances **bitter tastant** dextromethorphan-induced Ca^{2+} increase which was **inhibited** partially by protein kinase A **inhibitor**)

RN 60-92-4 HCAPLUS
CN Adenosine, cyclic 3',5'-(hydrogen phosphate) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.

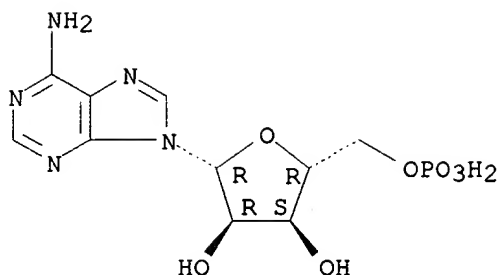


Adenosine 3':5'-cyclic monophos.

RE.CNT 52 THERE ARE 52 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

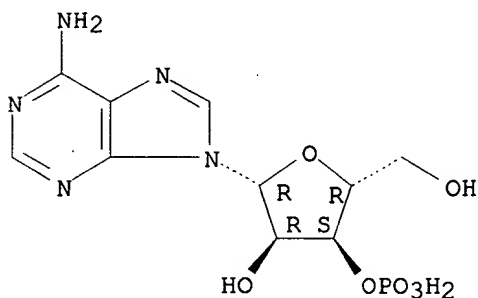
L19 ANSWER 6 OF 17 HCAPLUS COPYRIGHT 2002 ACS
AN 1999:548579 HCAPLUS
DN 131:270071
TI Blocking taste receptor activation of gustducin inhibits gustatory responses to bitter compounds
AU Ming, Ding; Ninomiya, Yuzo; Margolskee, Robert F.
CS Howard Hughes Medical Institute, The Mount Sinai School of Medicine, New York, NY, 10029, USA
SO Proc. Natl. Acad. Sci. U. S. A. (1999), 96(17), 9903-9908
CODEN: PNASA6; ISSN: 0027-8424
PB National Academy of Sciences
DT Journal
LA English
AB Gustducin, a transducin-like guanine nucleotide-binding regulatory protein (G protein), and transducin are expressed in taste receptor cells where they are thought to mediate taste transduction. Gustducin and transducin are activated in the presence of bovine taste membranes by several compds. that humans perceive to be bitter. We have monitored this activation with an in vitro assay to identify compds. that inhibited taste receptor activation of transducin by bitter tastants: AMP and chem. related compds. inhibited in vitro responses to several bitter compds. (e.g., denatonium, quinine, strychnine, and atropine). AMP also inhibited behavioral and electrophysiol. responses of mice to bitter tastants, but not to NaCl, HCl, or sucrose. GMP, although chem. similar to AMP, inhibited neither the bitter-responsive taste receptor activation of transducin nor the gustatory responses of mice to bitter compds. AMP and certain related compds. may bind to bitter-responsive taste receptors or interfere with receptor-G protein coupling to serve as naturally occurring taste modifiers.
IT 61-19-8, AMP, biological studies 84-21-9, 3'-AMP
130-49-4, Adenosine 2'-monophosphate
RL: BAC (Biological activity or effector, except adverse); BIOL (Biological study)
(AMP and chem. related compds. **inhibit taste**
receptor activation of transducin by **bitter tastants**
in vitro)
RN 61-19-8 HCAPLUS
CN 5'-Adenylic acid (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



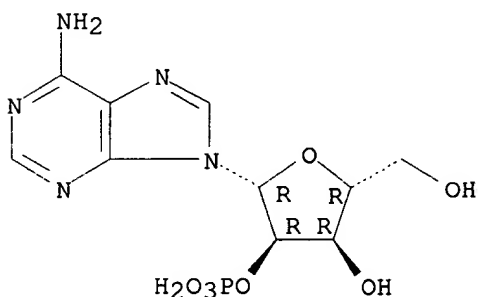
RN 84-21-9 HCAPLUS
 CN 3'-Adenylic acid (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).



RN 130-49-4 HCAPLUS
 CN 2'-Adenylic acid (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



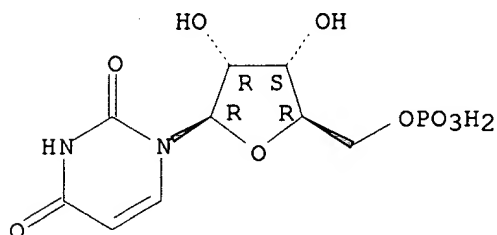
RE.CNT 32 THERE ARE 32 CITED REFERENCES AVAILABLE FOR THIS RECORD
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L19 ANSWER 7 OF 17 HCAPLUS COPYRIGHT 2002 ACS
 AN 1999:409028 HCAPLUS
 DN 131:72971
 TI Nucleotides for masking the flavor associated with salt in food
 IN Saito, Susumu; Araki, Atsushi; Araki, Hiroko; Shinro, Osamu
 PA Kohjin Co., Ltd., Japan
 SO Jpn. Kokai Tokkyo Koho, 5 pp.
 CODEN: JKXXAF

DT Patent
LA Japanese
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 11169131	A2	19990629	JP 1997-362520	19971215
AB	Sodium uridylate and sodium cytidylate are added in food to mask effectively the taste assocd. with salt in food such as pickled and/or salted food.				
IT	7545-48-4, Sodium 5'-uridylate RL: FFD (Food or feed use); BIOL (Biological study); USES (Uses) (nucleotides for masking flavor assocd. with salt in food)				
RN	7545-48-4 HCAPLUS				
CN	5'-Uridylic acid, sodium salt (8CI, 9CI) (CA INDEX NAME)				

Absolute stereochemistry.



Uridine 5'-monophos.

⊗ x Na

L19 ANSWER 8 OF 17 HCAPLUS COPYRIGHT 2002 ACS

AN 1996:38497 HCAPLUS

DN 124:115744

TI Sensory identification of effective components for masking bitterness of arginine in synthetic extract of scallop

AU Michikawa, Kyoko; Konosu, Shoji

CS Fac. Home Econ., Kyoritsu Women's Univ., Tokyo, 101, Japan

SO Nippon Shokuhin Kagaku Kogaku Kaishi (1995), 42(12), 982-8

CODEN: NSKKEF; ISSN: 1341-027X

DT Journal

LA Japanese

AB It was reported that a simplified synthetic ext. of scallop muscle satisfactorily reproduced the taste of the natural ext., and that neither the natural nor the synthetic ext. was bitter, despite their having the concn. of Arg approx. 6 times as high as the threshold concn. (50 mg/100 mL). These results suggest that one or more of extractive components mask the bitterness of Arg. In order to identify the effective component(s), sensory tests were conducted. A 0.3% Arg soln. was perceived as strongly bitter with weak sweetness. The relative strength of sweetness to bitterness was higher in dil. Arg solns., 0.15 and 0.075%, than the above concd. soln. It was confirmed by the omission test employing the synthetic ext. that Arg did not impart bitterness to the ext. Glu, AMP, Glu + AMP, and NaCl were found in an added test to decrease the strength of bitterness due to Arg, with NaCl being the most effective. The

effectiveness of NaCl was confirmed in another test, in which the panelists could not discriminate NaCl soln. from NaCl + Arg soln. in terms of bitterness.

IT 61-19-8, 5'-AMP, biological studies

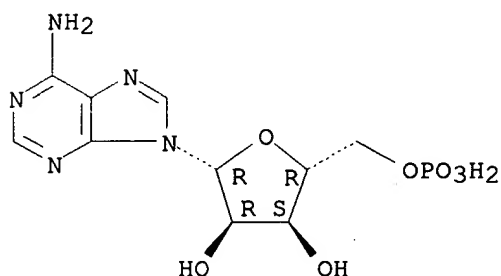
RL: FFD (Food or feed use); PRP (Properties); BIOL (Biological study); USES (Uses)

(sensory identification of effective components for **masking bitterness** of arginine in synthetic ext. of scallop)

RN 61-19-8 HCAPLUS

CN 5'-Adenylic acid (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



L19 ANSWER 9 OF 17 HCAPLUS COPYRIGHT 2002 ACS

AN 1994:5266 HCAPLUS

DN 120:5266

TI Inhibition of salt-induced gustatory responses in the frog (*Rana catesbeiana*) by 5'-GMP

AU Miyamoto, Takenori; Okada, Yukio; Sato, Toshihide

CS Department of Physiology, Nagasaki University School of Dentistry, 1-7-1 Sakamoto, Nagasaki, 852, Japan

SO Brain Res. (1993), 629(2), 345-8

CODEN: BRREAP; ISSN: 0006-8993

DT Journal

LA English

AB Millimolar concn. of sodium 5'-guanylate (5'-GMP), a 'umami' substance, inhibited salt-induced gustatory neural responses, particularly tonic components, of the bullfrog when the tongue was adapted to a low salt (5 mM NaCl) soln. but not when adapted to normal saline that contained 115 mM NaCl. The result suggests that 5'-GMP is a modulator of the adaptation process in salt response in the bullfrog taste system.

IT 85-32-5, 5'-GMP

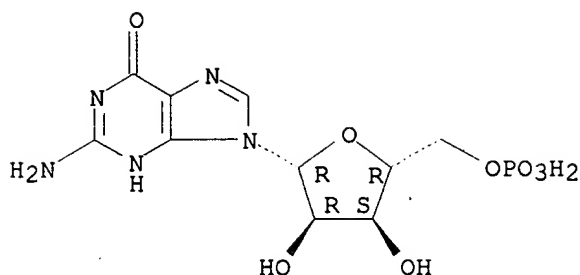
RL: BIOL (Biological study)

(salt-induced neurotransmission in **taste inhibition** by, in bullfrog)

RN 85-32-5 HCAPLUS

CN 5'-Guanylic acid (8CI, 9CI) (CA INDEX NAME)

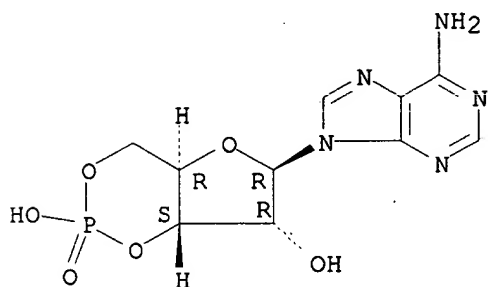
Absolute stereochemistry.



Guanosine 5'-monophos

L19 ANSWER 10 OF 17 HCAPLUS COPYRIGHT 2002 ACS
 AN 1988:110054 HCAPLUS
 DN 108:110054
 TI Transduction in taste receptor cells requires cAMP-dependent protein kinase
 AU Avenet, P.; Hofmann, F.; Lindemann, B.
 CS Univ. Saarlandes, Homburg, D-6650, Fed. Rep. Ger.
 SO Nature (London) (1988), 331(6154), 351-4
 CODEN: NATUAS; ISSN: 0028-0836
 DT Journal
 LA English
 AB In frog tongue taste bud taste receptor whole-cell and inside-out membrane patch recordings in the presence of ATP, addn. of the catalytic subunit of cAMP-activated protein kinase to the cytosolic side inactivates the 44-pS K⁺ channel, presumably by phosphorylation.
 IT 60-92-4, CAMP
 RL: BIOL (Biological study)
 (protein kinase dependent on, potassium channel of **taste** receptor **inhibition** by)
 RN 60-92-4 HCAPLUS
 CN Adenosine, cyclic 3',5'-(hydrogen phosphate) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



adenosine 3':5' monophos.

L19 ANSWER 11 OF 17 HCAPLUS COPYRIGHT 2002 ACS
 AN 1983:85214 HCAPLUS
 DN 98:85214
 TI Taste bud adenosine-3'5'-monophosphate phosphodiesterase: activity, subcellular distribution and kinetic parameters
 AU Law, J. S.; Henkin, R. I.
 CS Med. Cent., Georgetown Univ., Washington, DC, 20007, USA

SO Res. Commun. Chem. Pathol. Pharmacol. (1982), 38(3), 439-52
 CODEN: RCOCB8; ISSN: 0034-5164

DT Journal

LA English

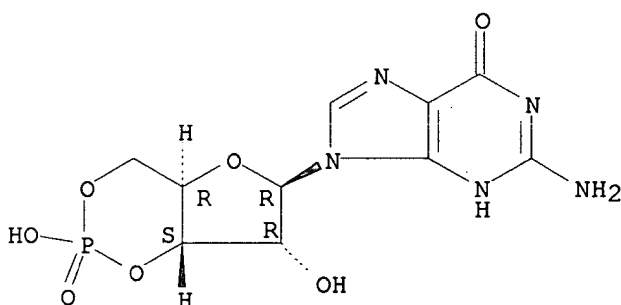
AB Higher activity of cAMP phosphodiesterase (I) was found in homogenates from bovine circumvallate papilla-bearing taste buds compared to activity in homogenates from areas surrounding these papillae in which no taste buds were present. With progressive purifn. of these homogenates, I activity increased in the taste bud-enriched fractions relative to that measured in the non-taste bud-bearing epithelial tissue. The highest levels of I activity were measured in those taste bud fractions in which the purifn. was greatest. Kinetic studies in both taste bud-derived and control tissues showed 2 apparent Km values, one relatively high, the other lower. I activity of taste bud membranes was enhanced by Mg²⁺, Mn²⁺, and imidazole, and inhibited by EGTA, IBMX, theophylline, and cGMP. A possible role for I in taste function is discussed.

IT 7665-99-8
 RL: BIOL (Biological study)
 (cAMP phosphodiesterase of **taste bud inhibition** by)

RN 7665-99-8 HCAPLUS

CN Guanosine, cyclic 3',5'-(hydrogen phosphate) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



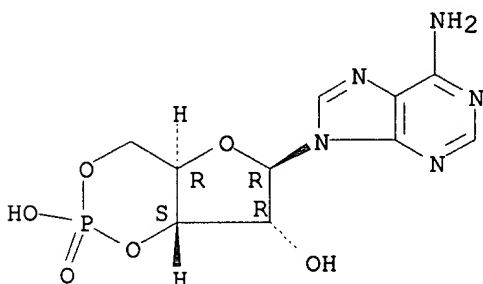
guanosine 2':3'-cyclic monophos.

IT 60-92-4
 RL: RCT (Reactant)
 (reaction of, with cAMP phosphodiesterase of **taste bud**,
 kinetics of)

RN 60-92-4 HCAPLUS

CN Adenosine, cyclic 3',5'-(hydrogen phosphate) (8CI, 9CI) (CA INDEX NAME)

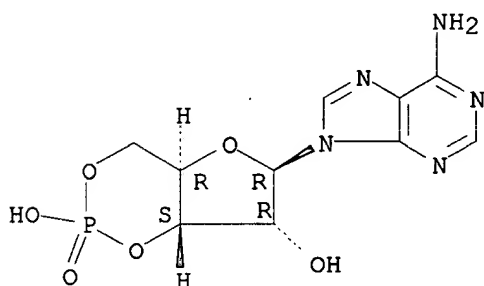
Absolute stereochemistry.



Adenosine 3':5'-cyclic monophos.

L19 ANSWER 12 OF 17 HCAPLUS COPYRIGHT 2002 ACS
 AN 1981:62973 HCAPLUS
 DN 94:62973
 TI Possible role of synaptic effects and cAMP on centrifugal inhibitory control of the taste receptor apparatus
 AU Esakov, A. I.; Serova, O. N.
 CS Anokhin Inst. Norm. Physiol., Moscow, USSR
 SO Fiziol. Zh. SSSR im. I. M. Sechenova (1980), 66(12), 1778-84
 CODEN: FZLZAM; ISSN: 0015-329X
 DT Journal
 LA Russian
 AB Activation of gastric interoceptors by stomach distention in rats considerably inhibited the afferent impulse activity in the chorda tympani induced by taste receptor stimulation with NaCl or citric acid solns. Transection of the ipsilateral cervical sympathetic nerve markedly reduced this centrifugal inhibition of the taste app. during stomach distention. Subepithelial injection of the .beta.-adrenergic blocker propranolol in the tongue also reduced the centrifugal inhibition. Injection of the .beta.-adrenomimetic isoproterenol, however, decreased the responses to salt and acid. Injection of cAMP or dibutyryl cAMP into the tongue also decreased the responses to salt and acid. A similar result was obtained when the cAMP phosphodiesterase (I) inhibitors papaverine or theophylline were injected. Oppositely, injection of the I activator nicotinic acid increased the responses to salt and acid. Hence, .beta.-adrenergic mechanisms ostensibly mediated by cAMP are involved in the centrifugal inhibition of taste reception.
 IT 60-92-4
 RL: BIOL (Biological study)
 (of tongue, in **taste** reception **inhibition** by centrifugal .beta.-adrenergic mechanism)
 RN 60-92-4 HCAPLUS
 CN Adenosine, cyclic 3',5'-(hydrogen phosphate) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



adenosine 3':5' - cyclic monophos.

L19 ANSWER 13 OF 17 HCAPLUS COPYRIGHT 2002 ACS
 AN 1980:122639 HCAPLUS
 DN 92:122639
 TI Biochemical studies of taste sensation. IX. Enhancement of L-[3H]-glutamate binding to bovine taste papillae by 5'-ribonucleotides
 AU Torii, Kunio; Cagan, Robert H.
 CS Monell Chem. Senses Cent., Univ. Pennsylvania, Philadelphia, PA, 19104, USA

SO Biochim. Biophys. Acta (1980), 627(3), 313-23

CODEN: BBACAQ; ISSN: 0006-3002

DT Journal

LA English

AB Binding of tritium-labeled L-glutamate [56-86-0] was measured to preps. of bovine circumvallate (**taste**) papillae (type I prepn.) and to control tongue epithelial preps. (type II prepn.) devoid of **taste** receptors. Substantially greater binding occurred to the type I prepn. than to the type II prepn., and the binding to the type I prepn. showed evidence of satn. The apparent K_d of L-glutamate was 20-30 mM. A several-fold enhancement of binding of L-glutamate-3H occurred in the presence of certain 5'-ribonucleotides. 5'-GMP di-Na salt [5550-12-9], 5'-IMP di-Na salt [4691-65-0], and 5'-UMP di-Na salt [3387-36-8] each increased the binding of L-glutamate-3H, whereas 5'-XMP di-Na salt [25899-70-1], 5'-AMP di-Na salt [4578-31-8], and 5'-CMP di-Na salt [6757-06-8] did not. None of these nucleotides affected the lower level of binding to the type II prepn. Neither the free bases, adenine [73-24-5] and guanine [73-40-5], their nucleosides nor their di- or triphosphonucleotides were effective in increasing L-glutamate-3H binding to the type I prepn. The nucleotide specificity of the glutamate binding enhancement therefore shows a marked similarity with the nucleotide specificity in evoking the synergistic **taste** effect in humans. Using 5'-GMP stimulation as a model, it appeared that the major effect was to increase the max. binding of L-glutamate-3H, but no marked change in K_d was apparent. The 5'-ribonucleotide may act to increase the extent of L-glutamate binding by unmasking previously **hidden** or buried receptor sites for L-glutamate.

IT 3387-36-8 4578-31-8 5550-12-9

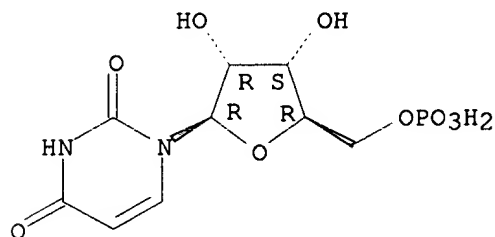
RL: BIOL (Biological study)

(glutamic acid binding by **taste** receptor enhancement by)

RN 3387-36-8 HCAPLUS

CN 5'-Uridylic acid, disodium salt (7CI, 8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



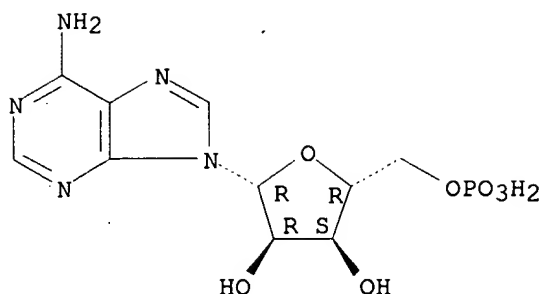
Uridine 5'-monophos.

⊖2 Na

RN 4578-31-8 HCAPLUS

CN 5'-Adenylic acid, disodium salt (7CI, 8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.

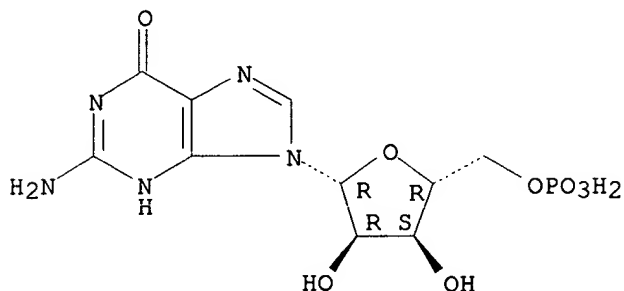


●2 Na

RN 5550-12-9 HCAPLUS

CN 5'-Guanylic acid, disodium salt (7CI, 8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



●2 Na

L19 ANSWER 14 OF 17 HCAPLUS COPYRIGHT 2002 ACS

AN 1979:162641 HCAPLUS

DN 90:162641

TI Taste receptor stimulation and feeding behavior in the puffer, *Fugu pardalis*. I. Effect of single chemicals

AU Hidaka, I.; Ohsugi, T.; Kubomatsu, T.

CS Fac. Fish., Mie Univ., Mie, Japan

SO Chem. Senses Flavour (1978), 3(4), 341-54

CODEN: CSFLA4; ISSN: 0302-2471

DT Journal

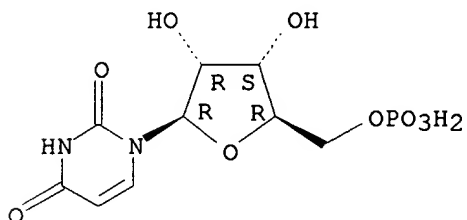
LA English

AB In electrophysiol. experimentation, various chems. are effective in stimulating the lip chemoreceptors of the puffer. Their effects as feeding stimulants on this fish were studied by offering the lip stimulants in starch pellets. The starch pellet by itself was not taken by the fish but it was accepted when stimulants such as clam exts. were added to it. Sucrose [57-50-1], ineffective as a lip chemoreceptor stimulant, had no effect on feeding behavior. NaCl, to which the lip chemoreceptors show a low sensitivity, did not affect the feeding response

when added to at 2M to clam exts. HCl and quinine-HCl [7549-43-1] inhibited the response of the fish to the clam exts. Alanine [56-41-7] and other amino acids, which were effective on the lip chemoreceptors, were accepted. AMP [61-19-8], IMP [131-99-7], UMP [58-97-9] and ADP [58-64-0] were not accepted in spite of their marked stimulatory effectiveness on the lip chemoreceptors. Sodium salts of fumaric [7704-73-6], malic [676-46-0] and succinic acids [150-90-3] were not accepted.

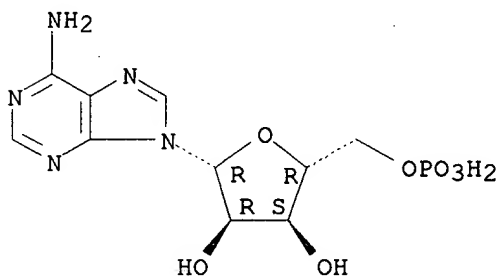
IT 58-97-9, biological studies 61-19-8, biological studies
 RL: BIOL (Biological study)
 (feeding behavior of puffer in response to, taste receptor stimulation in relation to)
 RN 58-97-9 HCAPLUS
 CN 5'-Uridylic acid (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.

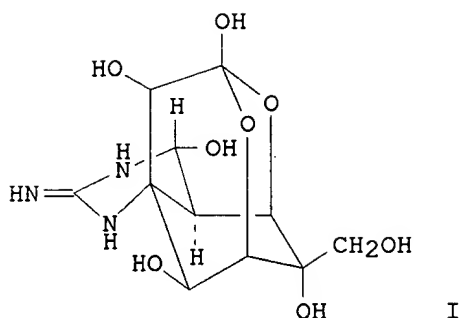


RN 61-19-8 HCAPLUS
 CN 5'-Adenylic acid (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



L19 ANSWER 15 OF 17 HCAPLUS COPYRIGHT 2002 ACS
 AN 1977:595079 HCAPLUS
 DN 87:195079
 TI A study on the gustatory response to tetrodotoxin in the rat
 AU Kasahara, Yasuo; Shimotahira, Koichi
 CS Med. Sch., Kagoshima Univ., Kagoshima, Japan
 SO Nippon Seirigaku Zasshi (1977), 39(5), 105-11
 CODEN: NISEAV
 DT Journal
 LA Japanese
 GI



AB Effects of tetrodotoxin (I) [4368-28-9] on neural responses of the chorda tympani to 4 basic **taste** stimuli were investigated in rats. When I (10 mg/mL) was applied directly to the tongue surface for 3 mins. magnitude of the integrated responses of the chorda tympani was diminished to .apprx.60% of that of the control response. This diminution of response was recovered within 30 mins. by degrees and the effect of I was antagonized by Na guanylate [13474-02-7]. The guanidyl group in the I may play an important role for the **inhibitory** actions to the responses of the chorda tympani. On the other hand, when I (0.25 mg/100 g) was applied intravenously, magnitude of the responses of the chorda tympani to 4 basic **taste** stimuli decreased gradually to 20.apprx.30% of that of the control responses within 60 mins and did not recover more than 10 h. This may be due to the blocking of the Na pump of nerve fibers in the chorda tympani by I.

L19 ANSWER 16 OF 17 HCAPLUS COPYRIGHT 2002 ACS

AN 1973:457692 HCAPLUS

DN 79:57692

TI Bitterness removal from medicines

IN Yoshino, Hiroshi; Nakamura, Genji; Yamanoshiro, Kazuhiko

PA Yamasa Shoyu Co., Ltd.

SO Japan., 4 pp.

CODEN: JAXXAD

DT Patent

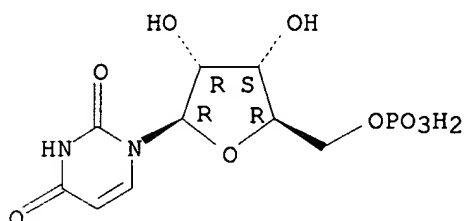
LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 48017044	B4	19730526	JP 1970-5160570	19700616
AB	<p><u>The addn. of UMP, CMP, or their Na salts [Na2UMP (I) and Na2CMP (II)] added alone or as a mixt. removed the bitter tastes of crude and org. drugs.</u> I, II, or a 1:1 I-II mixt. was added to the cooled decoction of a dose of crude drug such as Japanese chirata, gentian, bitter orange peel, camomile, and gentian decocted with 600 ml boiling H2O, or to the soln. of a dose of org. drug such as anti-pyrine (III), barbital (IV), aminophylline, pyrabital, and finalin dissolved in 300 ml H2O. The addn. of >0.2% of the nucleotides removed the bitterness. A mixt. of 100 g dried powder of Japanese chirata and 300 g II, 100 g dried powder of gentian and 240 g I, 100 g III and 66 g II, and 100 g IV and 132 g II were prepd. The bitterness of the decoction of a dose with 600 ml H2O or of</p>				

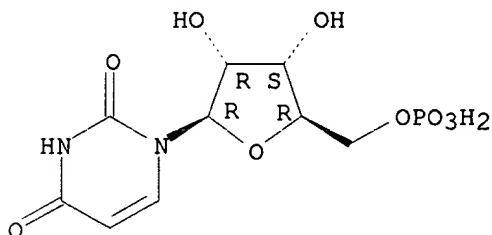
the soln. in 300 ml H₂O was slight.
 IT 58-97-9, biological studies 3387-36-8
 RL: BIOL (Biological study)
 (pharmaceutical **taste masking** by)
 RN 58-97-9 HCAPLUS
 CN 5'-Uridylic acid (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 3387-36-8 HCAPLUS
 CN 5'-Uridylic acid, disodium salt (7CI, 8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



● 2 Na

L19 ANSWER 17 OF 17 HCAPLUS COPYRIGHT 2002 ACS
 AN 1972:484042 HCAPLUS
 DN 77:84042
 TI Unlearned and learned effects of intrahypothalamic cyclic AMP injection on feeding
 AU Booth, D. A.
 CS Sch. Biol. Sci., Univ. Sussex, Brighton/Sussex, Engl.
 SO Nature (London), New Biol. (1972), 237(76), 222-4
 CODEN: NNBYA7
 DT Journal
 LA English
 AB Dibutyryl cyclic AMP (I) [362-74-3], when injected at 22.5 .mu.g into the rostral portion of the lateral hypothalamic area, the ventromedial hypothalamic nucleus, or the midposterior part of the lateral amygdaloid nucleus in female rats, induced complete **inhibition** of feeding for at least 3 hr in seven out of ten animals. I was also shown to induced learned **taste** aversion or preference, dependent on dosage and site of injection.

IT 362-74-3

RL: PRP (Properties)

(appetite **inhibition** by hypothalamic injection of)

RN 362-74-3 HCAPLUS

CN Adenosine, N-(1-oxobutyl)-, cyclic 3',5'-(hydrogen phosphate) 2'-butanoate
(9CI) (CA INDEX NAME)

Absolute stereochemistry.

